

**WPDES Permit and Nutrient Management Plan Inspection and File Review
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 5**

Purpose:

Investigation to determine compliance with Permit WI-0059374-03-0

Facility:

FOIA Ex. 6
(Personal) Ponderosa Dairy, LLC
FOIA Ex. 6 (Personal Privacy)

Kewaunee, Wisconsin 54216

Kewaunee County

FOIA Ex. 6 (Personal Privacy)

NPDES Permit Number:

WI-0059374-03-0

Date of Inspection:

FOIA Ex. 6's Ponderosa Dairy, LLC Permit WI-0059374-03-0 Permit Review
March 8 and 9, 2017

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Approval Date:

9/29/17

Approver Title: Ryan Bahr, Section 2 Chief, Water Enforcement and Compliance Assurance Branch

Approval Signature:



1. BACKGROUND

The purpose of this report is to describe, evaluate, and document **FOIA Ex. 6 (Personal)** Ponderosa Dairy, LLC **FOIA Ex. 6 (Personal)** compliance with the Clean Water Act, WPDES Permits WI-0059374-03-0, and Nutrient Management Plans at its Kewaunee, Wisconsin facilities. The review was performed pursuant to Section 308(a) of the Federal Water Pollution Control Act, as amended.

FOIA Ex. 6 (Personal) is a large concentrated animal feeding operation (CAFO) based on the number of animals confined at the facility for 45 days or more during a twelve-month period.

The facility makes use of manure ponds, an anaerobic digester, and solid stacking areas for manure storage and handling. The facility farms approximately 8,500 acres. Feed is stored in feed bunkers and dry commodity buildings.

Table 1 below lists the location of information in the permit and NMP.

Table 1				
Permit Terms	Requirements of Permit Terms			
NMP Location	FOIA Ex. 6 (Personal) permit WI-0059375-03-0 in Section 3.1.8 contains requirements for the permittee to furnish to the Department, within a reasonable time, any information which the Department may request etc. During the EPA March 8 and 9 permit review, FOIA Ex. 6 (Personal Privacy) had 2010 through 2016 Annual NMP Updates and Annual Reports available for EPA's review. EPA provided advance notice to FOIA Ex. 6 (Personal)			
Date NMP Submitted	FOIA Ex. 6 (Personal) permit WI-0059374-03-0 in Section 4.0 contains requirements for the submittal of the Annual NMP Updates and Annual Reports by the date in the permit. The date of when the NMP was submitted to WDNR was not in the NMPs or recorded in any of the documents reviewed by EPA.			
Planner Name/Company	FOIA Ex. 6 (Personal) permit WI-0059374-03-0 contains requirements for the NMP to meet the requirements of NR 243.14, which requires the plan to be developed by a nutrient management planner qualified under s. ATCP 50.48. Koss Ag LLC Benjamin Todd Koss 920-255-3303 CCA # 14151920 is writing the Annual NMP Updates.			
Date that the NMP was last updated	FOIA Ex. 6 (Personal) permit WI-0059374-03-0 in Section 4.0 contains requirements for the submittal of the Annual NMP Updates and Annual Reports by the date in this permit. March 23, 2016 was the completion/update for the 2016 Annual NMP Update.			
Storage Description	FOIA Ex. 6 (Personal) permit WI-0059374-03-0 in Section 1.1 contains requirements that all structures be designed and operated in accordance with ss. NR 243.15 and NR 243.17 to control manure and process wastewater for the purpose of complying with discharge limitations established in section 1.1 and groundwater standards. Plans and specifications were available during EPA's permit review on March 8 and 9, 2017.			
Amount of Manure Generated	FOIA Ex. 6 (Personal) permit WI-0059374-03-0 in Section 3.2.9 contains requirements that the permittee must include the amount of manure and process wastewater generated in its Annual Report.			
	Year	Yearly Solid Manure (tons)	Yearly Liquid Manure (gallons)	Yearly Liquid Manure (gallon) from satellite facility
	2013	Est.18,618. Actual solids generated not provided (pounds).	Est. 56,85,6956. Actual solids generated not provided (gallons)	Est. and actual not provided.

	<table><tr><td>2014</td><td>Actual 24,037</td><td>67,497,826</td><td>Not clear if this yearly liquid manure includes the satellite facility.</td></tr><tr><td>2015</td><td>Est. 26,577</td><td>Est. 63,634,556</td><td>Est. 46,302,606</td></tr><tr><td>2016</td><td>Actual 25,775</td><td>Actual 66,829,786</td><td>Actual 24,988,628</td></tr></table>	2014	Actual 24,037	67,497,826	Not clear if this yearly liquid manure includes the satellite facility.	2015	Est. 26,577	Est. 63,634,556	Est. 46,302,606	2016	Actual 25,775	Actual 66,829,786	Actual 24,988,628
2014	Actual 24,037	67,497,826	Not clear if this yearly liquid manure includes the satellite facility.										
2015	Est. 26,577	Est. 63,634,556	Est. 46,302,606										
2016	Actual 25,775	Actual 66,829,786	Actual 24,988,628										
Capacity of Storage	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.3.3 contains requirements that the permittee must demonstrate compliance with the 180-day design storage capacity requirement. The 2016 Annual Report completed by Todd Koss, FOIA Ex. 6 Consultant, reported that the storage capacity for liquid manure generated at FOIA Ex. 6 is 47,802,606 gallons.												
Duration of Storage	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.3.3 contains requirements that the permittee demonstrate compliance with 180-day design storage capacity requirement. Duration of storage for 2016 at FOIA Ex. 6 is 185 days of storage, which is approximately 6.2 months of storage.												
Amount of Spreadable Land	FOIA Ex. 6 permit WI-0059374-03-0 in Section 3.2.9 contains requirements that the permittee shall submit the following reports in accordance with s. NR 243.19(3). FOIA Ex. 6 did not report the acres actually used by the permittee for land application of manure and process wastewater.												
Mortality Management	FOIA Ex. 6 permit WI-0059374-03-0 in Section 3.2.4 contains requirements for mortality management.												
Clean Water Diversion System	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.2 contains requirements for clean water diversion.												
Direct Contact Prevention	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.5 contains requirements for direct contact prevention of livestock to or poultry to surface waters or wetlands located in or adjacent to the area unless approved by the department.												
Chemical Management	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.3.1 contains requirements for chemical management.												
Conservation Practices	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.6 contains requirements that the permittee must comply with this permit, a Department approved NMP, and s.NR 243.14.												
Manure Testing Protocols	FOIA Ex. 6 permit WI-0059374-03-0 in Sections 1.7 and 1.8 contains requirements that the permittee must comply with this permit and NR 243.19(1)(c).												
Soil Testing Protocols	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.7.2 contains requirements that the permittee must follow the requirements of this permit and NR 243.19(1)(c).												
Land Application Protocols	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.6 contains requirements that the permittee must follow the requirements of this permit, a Department approved NMP, and s. NR 243.14.												

Table 2: Land Application Records required by FOIA Ex. 6 (Personal P) permit WI-0059374-03-0 and location of the information.

Fields available for application	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.6 contains requirements to follow this permit and NR 243.14. NR 243.14 contains requirements for the permittee to follow Natural Resource Conservation Service (NRCS) Standard 590 standards. NRCS 590 in Section VII, Plans and Specifications, contains requirements for the submittal of a soil map and aerial photograph of the site.
Timing limitation on fields	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.6 contains requirements to follow the conditions in this permit, a Department approved NMP, and NR. 243.14. These requirements limit or prohibit applications on fields during certain times of year and under certain permit conditions. EPA reviewed dates and weather conditions for application of manure, which is documented in the SnapPlus Annual Spreading Report and Daily Logs.
Annual manure analysis for N and P	FOIA Ex. 6 permit WI-0059374-03-0 Section 1.7.2 states “The permittee shall collect and analyze representative samples of land applied manure and process wastewater for the parameters outlined in the monitoring requirements for each sample point.” According to FOIA Ex. 6 permit WI-0059374-03-0, manure samples are to be taken 2x per discharge

	during land application from the pits that FOIA Ex. 6 (Personal) uses manure from for land application. Table 8 below shows the times when manure analysis for N and P were completed.
Soil tests for fields (for P) less than 5 years old?	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.7.2 states “the permittee shall also collect soils from fields used for manure and process wastewater application at least once every four years.” EPA reviewed the soil tests for fields that manure was applied on in years 2015 and 2016.
Inspection of land application equipment documentation	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.71. contains requirements for the permittee to conduct inspections of land application equipment and document these inspections and calibrations. FOIA Ex. 6 (Personal) sends out the flow meters to be calibrated. The calibration dates are to be marked on the CAFO Calendar, but this has not been done consistently. FOIA Ex. 6 (Personal) provides a brief overview of its calibration methodology and some sample calculations, but does not provide calibration records for specific machinery.
Crop	FOIA Ex. 6 permit WI-0059374-03-0 in Section 3.2.9 contains requirements for the permittee to submit the following reports in accordance with NR. 243.19(3). The actual crop is provided in the Annual Spreading Report.
Application Rate	FOIA Ex. 6 permit WI-0059374-03-0 in Section 3.2.9 contains requirements for the permittee to submit the following reports in accordance with s. NR. 243.19(3). The permit WI-0059374-03-0 and NR. 243.14(3) requires that the permittee when calculating application rate states “adjustments shall be made to assumed credits based on actual crop yields”. FOIA Ex. 6 (Personal) calculated its application rates using planned cropped yield goal, not an actual crop yield for crops.
Crop Yield Goals	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.6 contains requirements for the permittee to follow this permit, a Department approved NMP, and s. NR 243.14. FOIA Ex. 6 (Personal) provides planned crop yield goals in the “SnapPlus Spreading and Nutrient Management Sorted by Crop Report”.
Timing of land application	FOIA Ex. 6 permit WI-0059374-03 contains general spreading restrictions that include timing of land application. This information can also be found in NR 243.14 and more specifically in the Annual NMP Updates.
Method of land application	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.6 contains requirements for the permittee to follow this permit and NR. 243.14. The method of application is discussed in the narrative of the Annual NMP Updates and is also included in the Annual Spreading Reports.

Table 3 questions may have been previously answered during the April 30, 2014 and reiterated in this report or the information was gathered during the permit review conducted on March 8 and 9, 2017.

Table 3: Facility Records (details of the records reviewed)

Diversion devices	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.2 contains requirements that uncontaminated runoff shall be diverted away from manure and process wastewater storage and contaminated areas etc. FOIA Ex. 6 permit contains requirements for the permittee to conduct weekly inspections of these diversion device. These inspections are done by FOIA Ex. 6 employees who conduct weekly inspections of the runoff control devices and record the weekly inspections on the CAFO Calendar. FOIA Ex. 6 (Personal) submits the CAFO Calendar to WDNR in the Annual Report.
Impoundments	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.1 contains requirements that all structures shall be designed and operated in accordance with ss. NR. 243.15 and NR 243.17. FOIA Ex. 6 design submittals were provided to EPA during when EPA’s March 8 and 9, 2017 inspection.
Depth marker observations	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.3.1 contains requirements to have depth markers. Section 1.71. contains requirements to conduct weekly monitoring of the depth markers. FOIA Ex. 6 (Personal) documents these readings, which can be found within the Containment Structure Inspection Report. It is initialed by whomever on FOIA Ex. 6 (Personal) staff is conducting the inspection. These forms are submitted to WDNR in the Annual Report.

Water Lines	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.7.1 contains requirements to conduct daily inspections of water lines. FOIA Ex. 6 (Personal) does visual inspections and documents that the water lines have been checked. The inspections are recorded in the monthly CAFO Calendar, which is provided to WDNR in the Annual Report.
Mortality handling	FOIA Ex. 6 permit WI-0059374-03-0 in Section 3.2.4 contains requirements for the permittee to record the date and method of carcass disposal and keep records on-site. These documents are not required to be submitted to WDNR. FOIA Ex. 6 maintains these records on its computer and the manager can pull up the records upon request. Mortalities are rendered to a mink farm or made into dog food.
Storage Structure Design	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.1 contains requirements that all structures shall be designed and operated in accordance with ss. NR. 243.15 and NR 243.17. The storage structure designs were provided during EPA's inspection on March 8 and 9, 2017.
Overflow records	FOIA Ex. 6 permit WI-0059374-03-0 in Section 3.2.9 contains requirements for the permittee to submit the following reports in accordance with s. NR. 243.19(3). The Annual Report submitted to WDNR includes a section for FOIA Ex. 6 (Personal) overflows.
Crop Yields	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.6 contains requirements for the permittee to follow this permit, a Department approved NMP, and s. NR 243.14 and NRCS 590. The crop yields are based on planned crops yields not actual crop yields. It is submitted with the Annual NMP Update in the SnapPlus Spreading and Nutrient Management Sorted by Crop Report.
Land Application Dates	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.6 contains requirements for the permittee to follow this permit, a Department approved NMP, and s. NR 243.14. The land application dates are provided in the Daily Logs and the in the Annual Spreading Report.
Weather Conditions at time of application (24 before-24 after)	FOIA Ex. 6 permit WI-0059374-03-0 in Section 3.2.8 contains requirements that the permittee document (24 before and 24-after) as in accordance with NR 243.19(2). Weather is only taken directly prior to application, not recorded 24 hours before or after.
Test Methods for Manure Testing	The permittee must follow the manure test methods in FOIA Ex. 6 (Personal) permit WI-0059374-03-0 in Section 1.7.2 and in accordance with NR 243.19(1) (c).
Test Methods for Soil Testing	The permittee must follow the soil test methods in FOIA Ex. 6 (Personal) permit WI-0059374-03-0 in Section 1.7.2 and in accordance with NR 243.19(1) (c).
Manure Test Results	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.7.2 and in accordance with NR 243.19(1) (c) contains requirements that the permittee submit the results with the Annual Report. EPA has found that these documents have also been submitted in the Annual NMP Update.
Soil Test Results	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.7.2 and in accordance with NR 243.19(1) (c) contains requirements that the permittee submit the results with the Annual Report. EPA has found that these documents have also been submitted in the Annual NMP Update.
Calculations of N and P applied	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.6 contains requirements that the permittee follows the requirements of this permit, a Department approved NMP, and s. NR 243.14 and NRCS 590. FOIA Ex. 6 uses SnapPlus to calculate applied N and P.
Application Methods	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.6 contains requirements for the permittee to follow the requirements of this permit, a Department approved NMP, and s. NR 243.14. FOIA Ex. 6 documents methods of application in the Annual Spreading Reports and the Daily Logs.
Application Equipment Inspection Date	FOIA Ex. 6 permit WI-0059374-03-0 in Section 1.7.1. contains requirements that the permittee conduct inspections of land application equipment and document these inspections and calibrations. Equipment inspections are not kept, except for the flow meter. There is a general statement within the Annual NMP Update in the narrative on how inspections are to be done.

Table 4: NPDES Permits

Type of permit (General, individual)	Individual Permit				
Is a copy of the permit on site?	Yes, FOIA Ex. 6 s provided a copy of its permit during the inspection done on March 8 and 9, 2017.				
Date that the permit was issued	WI-0059374-03-0 October 22, 2010 WI-0059374-04-0 April 01, 2016				
Date that the permit expired or will expire	WI-0059374-03-0 October 31, 2015 WI-0059374-04-0 March 31, 2021				
Permitted number of animal units	Year	Total Animals	Federal Equivalent Animal Units	Yearly Solid Manure (tons)	Yearly Liquid Manure (gallons)
	2010	4,600	6,578	15,682	45,409,650
	2011	7,300	8,705	18,475	57,409,390
	2012	7,300	8,705	18,475	57,409,390
	2013	7,478	8,400	18,618	56,85,6956
	2014	8,838	8,909	24,037	67,497,826
	2015	9, 446	8630	26,577	63,634,556
	2016	9879	8938	25,775	66,829,786
Does the permit contain a compliance schedule?	Yes, both the new and old permit contain a compliance schedule.				
Have there been any changes made to the production area since the permit was issued? If yes, provide a detailed description.	FOIA Ex. 6 (Personal) made changes in the way in which it collects process wastewater from the feed pad area. EPA met at FOIA Ex. 6 (Personal) with NRCS and discussed how additional process wastewater will be collected from the feed pad. The Vegetated Treatment Area (VTA) will be bermed to prevent process wastewater from leaving the VTA and entering the roadside culvert.				
Are there any practices in the permit that are not being done at the facility? (Records kept, inspections performed, etc.)	This will be discussed below in the summary of areas of concern below.				

2.0 EPA's Findings:

EPA's findings from it review of Permit WI-0059374-03-0 and all required documents associated with its permit, which include the Annual NMP Updates, Annual Reports, and record keeping requirements and submittals etc.

- 2.1 [FOIA Ex. 6 (Personal)] permit WI-0059374-03-0 in Section 1.3.1 contains requirements for storage of chemicals and other pollutants. Chemicals cannot be added to manure, process wastewater or storm water storage facilities or treatment systems without prior Department approval.
- During EPA's inspection on April 30, 2014, there was a drain within the chemical storage area that flowed to the manure storage structures. According to the WPDES permit, chemicals cannot discharge to the manure storage structure without Department prior approval. EPA did not find any information within the Annual NMP Updates describing a change in this process for chemical storage or any approval from the Department for chemicals to be discharged into the manure storage structures.
- 2.2 [FOIA Ex. 6 (Personal)] permit WI-0059374-03-0 in Sections 1.3 and 1.6 contains requirements to manage manure and process wastewater.
- The Annual NMP Updates and associated documentation do not explicitly address the production or use of process wastewater. It was unclear based on the documentation if [FOIA Ex. 6 (Personal)] is producing or incorporating process wastewater at its main facility and satellite facility. EPA is aware that process wastewater is being generated at [FOIA Ex. 6 (Personal)] satellite and main facility because of the findings in EPA's inspection report dated February 2, 2016.
- 2.3 [FOIA Ex. 6 (Personal)] permit WI-0059374-03-0 contains requirements for the submittal of two annual reports to WDNR. The first is the Annual Report and the second is the Annual NMP Update.
- Some of the information which is required by the Permit and NR 243.19(3) is to be included in the Annual Report, but is found in the Annual NMP Update or is provided separately and not found within either of the two documents. These documents include the following, which are required by WPDES Permit WI-0059374-03-0 Section 1.8.4:
 - a. Soil Test P average
 - b. Field Restrictions
 - c. Lab analyses of the manure
 - d. The "tolerable soil loss" or "T" compliance worksheet for all fields
 - e. The soil test frequency in the past four years
 - f. Manure Tests

Additional information which is found in the Annual NMP Update, but not in the Annual Report includes the following requirements from N243.19(3)(c):

- a. Whether animals (at the operation) are in open confinement or housed under roof.
- b. The most recent soil test analyses completed for fields receiving manure or process wastewater in the previous 12 months.

The inclusion of the above information in the Annual NMP Update instead of the Annual Report is inconsistent with the requirements within Permit WI-0059374-03 or NR 243.19(3).

- 2.4 [FOIA Ex. 6 (Personal)] permit WI-0059374-03-0 in Section 1.8.4 and in Section 1.7.3 and in accordance with NR 243.19(3)(c)5 contains requirements that the permittee record the following information on form 3200-123A. EPA reviewed form 3200-123A and other documents generated by SnapPlus for the information required in form 3200-123A for the years 2015-2016 and determined that the following information required by the form was not documented for those years:
- Temperature During Application – Units -Fahrenheit
- 2.5 [FOIA Ex. 6 (Personal)] permit WI-0059374-03-0 in Section 1.8.4 and in Section 1.7.3 and in accordance with NR 243.19(3)(c) 5 contains requirements for the submittal of form 3200-123. EPA reviewed [FOIA Ex. 6 (Personal)] documents for the years 2010-2016 and found that some, but not all, of the information that is to be recorded on form 3200-123 is submitted by [FOIA Ex. 6 (Personal)] on a document generated by SnapPlus entitled “CAFO Annual Spreading Report”. It is unclear if WDNR has granted approval for the use of this report. According to the WDNR 227.23, forms are considered as rules by WDNR.
- 2.6 [FOIA Ex. 6 (Personal)] permit WI-0059374-03-0 contains requirements for the permittee to conduct inspections and calibrations of land application equipment and document these inspections and calibrations.
- EPA did not find information containing dates of inspections of land application equipment.
 - EPA found that the calibration of equipment was not consistently recorded on the CAFO Calendar or otherwise as required by [FOIA Ex. 6 (Personal)] permit.
- 2.7 [FOIA Ex. 6 (Personal)] permit WI-0059374-03-0 contains requirements for the permittee to follow its permit and NR 243.14(3), for adjusting the application rate of manure and process wastewater based on actual crop yields.
- EPA found that in reviewing documents submitted by [FOIA Ex. 6 (Personal)] that only planned crop yields were used for calculations, not the actual crop yields.
- 2.8 [FOIA Ex. 6 (Personal)] permit WI-0059374-03-0 contains requirements for the permittee in Section 1.8.4 and Section 1.7.3 and NR 243.19(3)(c) 5 to include:
- a. [FOIA Ex. 6 (Personal)] is reporting total field acres not the total number of acres actually used by the permittee for land application of manure and process wastewater in the previous 12 months, which is required by both the old and new permits WI-0059374-03-0 and WI-0059374-04-0. The “acres applied” appears to include field acres, which includes setbacks and other areas where manure cannot be applied. Application rates are calculated based on the “acres applied” to the field and therefore may be underreported due to fewer acres being applied. This means that higher application rates may be occurring than what has been recommended by UW Extension which could lead to over-application.
 - b. The “Acres Applied” is not reported.
 - c. The “Legume Credit”, “Second Year Manure Credit”, Additional Fertilizer Nitrogen”, and “Additional Fertilizer: P205” parameters required by the permit are not reported.
 - d. The “Banked” parameter required by the permit is not reported.

- 2.9 **FOIA Ex. 6 (Personal)** permit WI-0059374-03-0 in Section 1.6 contains requirements for the permittee to follow its permit and s. NR. 243.19. NR. 243.19 contains requirements for the permittee to report the actual crop for that year and the prior crop. Table 5 shows discrepancies between the annual spreading reports for 2014 and 2015.

Table 5 – Discrepancy in Annual Spreading Reports 2014 and 2015

Field Name	2014 Annual Spreading Report Crop	2015 Prior Crop on the Annual Spreading Report
H-6	Alfalfa	Grass Hay
J-2	Alfalfa	Grass Hay
LH-4	Alfalfa	Grass Hay
O-5	Alfalfa	Grass Hay

- 3.0 **FOIA Ex. 6 (Personal)** permit WI-0059374-03-0 in Section 3.1.9 contains requirements that the following information must be recorded:
- a.) exact place, method, and time of sampling
 - b.) the individual that performed the sampling

On March 8 and 9, EPA reviewed available documents and asked Todd Koss if the information above was available for review, according to Mr. Koss the information is not recorded.

FOIA Ex. 6 (Personal) permit WI-0059374-03-0 in Section 3.1.9 contains requirements for the specific method to be used for collection of soil samples. Table 6 identifies fields where the required method was not used. The results below also show decreases in the soil tests for P205 that could not be achieved within the years shown, as further explained below Table 6.

Table 6– Error with Soil Sampling Results for P205

Field ID	Soil Test Date	P205	Soil Test Date	P205	Notes
WS-5	7/26/2010	197	10/1/2013	38	Major drop in sample results
Ckinstetter-1	9/8/2011	325	9/2/2015	9	Major drop in sample results
L-Foster-3	5/11/2011	344	12/10/2014	56	Major drop in sample results

According to the “Nutrient Application Guidelines for field, vegetable, and fruit crops in Wisconsin” (A2809), the amount of phosphorus to change soil test by 1 ppm in Wisconsin is called the “buffer capacity”. Table 7.3 in A2809 lists the buffer capacity maximum as 18 lb. P205/a per 1ppm soil test P, which means it takes 18 pounds of removal to lower the soil test by one ppm.

- 3.1 **FOIA Ex. 6 (Personal)** permit WI-0059374-03-0 in Section 3.2.8 contains requirements for the permittee to keep records in accordance with NR 243.19(2).

- Table 7 identifies six manure samples that were reported in annual reports for years 2014-2015 without sampling dates.

Table 7- Missing Sampling Dates

Sample Name	Type	Date Sampled	Date Analyzed
Pit 2	Liquid	No sampling date	9/27/2013
Pit 2	Slurry	No sampling date	11/22/2013
Clyde Hill Bed Pack	Solid	No sampling date	10/16/2014
Pit 2 – Clyde Hill	Liquid	No sampling date	5/11/2015
Pit 3-	Liquid (slurry)	No sampling date	5/11/2015
Pit 4	Liquid	No sampling date	5/11/2015

- 3.2 FOIA Ex. 6 (Personal) s permit WI-0059374-03- in Section 1.8.3 lists the sample frequency required for Sampling Points 001, 002, 003, 004. A review of the Annual Spreading Reports and the Manure Nutrient Analysis show that for crop years 2015-2016 FOIA Ex. 6 (Personal) did not meet the “2/Discharge” sample frequency required by its permit when land application of manure and process wastewater occurred from the sources identified in Table 8. According to the data available, it appears that FOIA Ex. 6 (Personal) did not properly sample a total of 16 months during this time. Table 8 below shows for each manure source, the months for which manure was applied and the frequency of sampling which occurred during those months.

Table 8- Liquid Manure Sampling Frequency and Application

Sources	Pit 1		Pit 2		Pit 3		Pit 4		Clyde Hill-2	
	Applied	Sampled	Applied	Sampled	Applied	Sampled	Applied	Sampled	Applied	Sampled
January-14										
February-14										
March-14										
April-14										
May-14		1/2								
June-14										
July-14						1/2		1/2		
August-14								1/2		
September-14					X	1/2				
October-14					X	0/2	X	0/2		
November-14					X	0/2	X	0/2	X	0/2
December-14			X	0/2	X	0/2			X	0/2
January-15										
February-15										
March-15										
April-15					X	0/2	X	0/2		
May-15					X		X	0/2		
June-15					X	0/2	X	0/2		
July-15							X	0/2		

August-15						X	0/2		
September-15									
October-15					2/2		1/2		
November-15		1/2		2/2			1/2		
December-15									

X = month that manure was applied

1/2 = 1 of the 2 required samples were taken when manure was applied out of that pit.

0/2 = 0 of the 2 required samples were taken when manure was applied out of that pit.

- 3.2.1 A review of the Annual Spreading Reports and Manure Nutrient Analysis Reports identified that for crop years 2015-2016, FOIA Ex. 6
Personal did not sample quarterly when it applied manure from Sample Point 05. Permit WI-0059374-03-0 requires “quarterly” sampling when land application of solid manure occurs from the source identified as “Sample Point 005”. Tables 9 and 10 identify the dates when sampling was conducted, but sampling was only done in 2014 and 2015 for solids for two quarters.

Table 9 – 2014 Solid Manure Sampling

Sampling Point	Date Collected	Date Analyzed	Sample Type
Clyde Hill Calf Hutch Bed Pack	5/6/2014	5/15/2014	Solid
Bed Pack Clyde Hill	5/30/2014	6/16/2014	Solid
Clyde hill Bed pack	No sampling date	10/16/2014	Solid
Clyde Hill Calf Hutch	10/28/2014	11/03/2014	Solid

Table 10– 2015 Solid Manure Sampling

Sampling Point	Date Collected	Date Analyzed	Sample Type
Clyde Hill Bed Pack	4/17/2015	4/23/2015	Solid
Clyde Hill Bed pack	10/9/2015	10/16/2015	Solid

- 3.3. **FOIA Ex. 6 (Personal)** permit WI-0059374-03-0 in Section 1.6 requires that “The permittee shall land apply manure and process wastewater in compliance with a Department approved NMP, s. NR 243.14 and the terms and conditions of permit WI-0059374-03-0 (this permit). Land application practices shall not exceed crop nutrient budgets determined in accordance with NRCS Standard 590, this permit and s. NR243.14 and shall be based on manure and process wastewater analyses, as well as other nutrient sources applied to a field. The permittee shall review and amend the NMP on an annual basis to reflect any changes in operations over the previous year (including incorporation of the previous year’s amendments and new soil test results) and to include projected changes for the upcoming year. Annual updates are due in accordance with the Schedules section of this Permit.”

NRCS Standard 590 V.A.1 a states that CAFOs must “Develop and implement an annual field-specific nutrient application plan. Account for the source, rate, timing, form, and method of application for all major nutrients consistent with this standard and soil fertility recommendations found in University of Wisconsin-Extension (UWEX) Publication A2809, ‘Soil Test Recommendations for Field, Vegetable and Fruit Crops,’ unless use of the following options are appropriate:

- For crops not listed in A2809, use other appropriate Land Grant University recommendations.
- For nutrient applications decisions based on plant available tissue analysis, the sampling and testing of plants and the resulting nutrient recommendations shall be done in accordance with University of Wisconsin recommendations. See A.1.1”

Permit WI-00593744-03-0 and the prior permit requires that **FOIA Ex. 6 (Personal)** receives prior written approval from WDNR for application to any field with soil test P greater than 200 ppb.

- 3.3.1 In two instances where manure application was planned on fields with soil test P greater than 200 ppm, the documents provided by WDNR and **FOIA Ex. 6 (Personal)** did not include documentation of WDNR granting **FOIA Ex. 6 (Personal)** permission to apply to those fields. According to the 590 Assessment Plans, for the years 2012 and 2013, field PFS-1 had a phosphorous level greater than 200 ppm. The 2013 Annual Report indicates that PFS-1 received an injected liquid manure application at a rate of

5,022 gals/acre over the entire field (49.7 acres) and applied non-manure fertilizer 9-18-9 was applied to the field at a rate of 5 gals/acre over the entire field.

- 3.3.2 FOIA Ex. 6
Personal applied Nitrogen 19 times at application rates higher than permitted rates as shown in Tables 13 and 14 below:

Table 11- 2015 – Nitrogen over-application on fields under the control of FOIA Ex. 6
(Personal) **Ponderosa Dairy, LLC**

Field Name	Prior Crop	2015 Crop	UW Recommended Rate of Nitrogen	Nitrogen application Rate including manure, fertilizer and nutrient credits	Manure Applied Nitrogen (lb./acre)	Legume Nitrogen Credit (lb./acre)	20% increase in Nitrogen application	20 lbs. of Starter fertilizer for Corn allowed (lb.)	Previous 2 nd year manure application rate (Tons/Acre)	Planned Fertilizer (lb.)	Actual Fertilizer Application rate (lb.)	Over-Application
Dennis Stodola 30	Missing	Corn Silage	140	177	170	NA	NA	160	Cannot calculate with information provided	Could not locate	7 lbs.	Yes
Dennis Stodola 31	Winter wheat grain and straw	Corn Silage	140	177	170	NA	NA	160	Cannot calculate with information provided	9lbs	Not sure	Yes
JL-New House	Winter wheat grain and straw	Corn silage	140	176	167	NA	NA	160	Cannot calculate with information provided	28 lbs. in the spring and 9lbs in the fall	9lbs	Yes
J Selner	Winter wheat grain and straw	Corn silage	140	187	178	NA	NA	160	Cannot calculate with information provided	46 lbs.	9lbs	Yes
Kswagel-VS-2-4	Winter wheat grain and straw	Corn silage	140	184	175	NA	NA	160	Cannot calculate with information provided	NA	9lbs	Yes
ML-Dufect-2A	Corn Silage	Winter wheat grain and straw	75	124	81	NA	NA	NA	Cannot calculate with information provided	NA		Yes
Silver B-Green	Soybeans 7-10-inch row	Corn Grain	130	175	142	Cannot calculate with	156	176	Cannot calculate with	NA	2.81	Maybe

						information provided			information provided			
Slambrect – SL-2	Soybeans 7-10-inch row	Corn Silage	140	215	211	Cannot calculate with information provided	168	188	Cannot calculate with information provided	NA	4lbs	Yes
W-Selner-2	Winter wheat grain and straw	Corn Grain	140	247	102	NA	NA	160	Cannot calculate with information provided	NA	50lbs.	Yes
H-6	Grass Hay	Winter Wheat (grain) to Late direct seeded Legume Forage	75	128	123	NA	95	None	Cannot calculate with information provided	NA	6 lbs./acre	Yes
J-6	Corn silage	Oat-Pea forage with Alfalfa Seeding	210	262	206	NA	NA	NA	Cannot calculate with information provided	NA		Yes
JS-1	Alfalfa	Winter wheat grain + straw	75	170	41	Cannot calculate with information provided	90	NA	Cannot calculate with information provided			Yes
JW-Bill	Corn Grain	Soybeans 7-10-inch row	140	249	226	Cannot calculate with information provided	NA	160	Cannot calculate with information provided	NA		Yes
JW-Moms3	Corn silage	Soybeans 7-10-inch row	140	180	157	Cannot calculate with information provided	NA	160	Cannot calculate with information provided	NA		Yes

Table 12– 2016 Nitrogen Over-application of fields under the control of Ponderosa Dairy, LLC

Field Name	Prior Crop	2016 Crop	UW Recommended Rate of Nitrogen	Nitrogen application Rate including manure, fertilizer and nutrient credits	Manure Applied Nitrogen in 215	20% increase in Nitrogen application	20 lbs. of Starter fertilizer for Corn	Legume Credit	Previous 2 nd year manure application rate	Planned Fertilizer	Actual Fertilizer Application rate	Over-Application
Dennis Stodola 24 25 26	Soybeans 7-10-inch row	Beets Table	100	124	104	120	NA	Not able to calculate with the information provided	Not able to calculate with the information provided	NA	Not able to calculate with the information provided	Yes
M Chervenka-4	Grass hay	Beets table to small grain cover crop	100		125	NA	NA	NA	Not able to calculate with the information provided	NA	Not able to calculate with the information provided	Maybe
ML-Kroll-3	Winter wheat (grain straw)	Corn silage	140	174	170	NA	160	NA	Not able to calculate with the information provided	NA	4lbs	Yes
BL-3	Corn Silage	Winter wheat (grain +Straw)	75	138	111	NA	NA	NA	Not able to calculate with the information provided	NA	NA	Yes
RP-1	Corn silage	Winter Wheat (grain +straw)	75	200	159	NA	NA	NA	Not able to calculate with the information provided	NA		

3.3.3 WS-5 and PFS-8 were reported as having soil tests between 100-200 ppm. WS-5 was reported as not meeting the drawdown rate for P205. For each crop year, calculations showed that the amount of phosphorus applied and the amount of phosphorus uptake from the crops to calculate the P balance for both WS-5 and PFS-8. The amount applied was calculated using manure application data from the Annual

Reports. Crop phosphorus uptake was determined using planned crop yield goals from the NMP documentation. It is important to note that the EPA planned crop yield goals were used for this calculation because FOIA Ex. 6
Personal did not provide records of actual crop yield. Table 15 presents a summary of the findings. Based on the drawdown approach of using planned crop yields (not actual), the drawdown requirements were not met for fields WS-5 (consistent with determination utilizing Snap Plus data) and PFS-8 (not consistent with the determination utilizing SnapPlus data).

Table 13 Fields with Soil Test P Between 100 ppm – 200ppm (yrs 2010- 2014)

Field ID	PI	Rotational P205 balance (lb/Acres)	P20 Balance Target (lb/ac)	Drawdown Requirement Met? (Y/N)
WS-5	2	60	-79	N
PFS-8	1	-171	-86	N

3.4 FOIA Ex. 6 (Personal) Permit WI-0059374-03-0 in Sections 1.6.1 and 1.6.3 in accordance with s. NR 243.14 and in accordance with NRCS 590 contain requirements that the NMP must include a soil map and aerial photograph of the site.

- Several fields from crop years 2013-2016 that are receiving manure application per the Annual Spreading Reports did not include these maps in the Annual NMP Updates:
 - **2013:** Ckinsetter, Dale Jandrain, Flux-LL-1, Flux-LL-5&, HC-10, HC-7, HC-8, HC-9, JL-Blahnik, LH-1, Steve S-CH
 - **2014:** Kswagel – JH-1, Nimmer 1, and JW-Moms—1
 - **2015:** CF-1, ML-Linda-1 (this could have been entered wrong ML-Lisa-1), M Chervenka-9 (listed in the 2016 Annual NMP update but not in NMP Update 2015).
 - **2016:** CF-1, TS-1. ML-Linda-1 (this could have been entered wrong ML-Lisa-1?)

4.0 Summary of Areas of Concern:

1. In Crop Year 2015- 2016, FOIA Ex. 6 (Personal) applied Nitrogen 19 times at a Nitrogen rate inconsistent with its permit WI-0059374-03-0, its Department approved NMP, NRCS 243.14, and NRCS Standard 590.
2. In Crop Year 2012-2015, FOIA Ex. 6 (Personal) applied manure 2 times at a Phosphorus rate inconsistent with permit WI-0059374-03-0, its Department approved NMP, NR 243.14, and NRCS Standard 590.
3. The following information was not submitted by FOIA Ex. 6 (Personal) as requirement by its permit WI-0059374-03-0 in Sections 1.8.4 Section 1.7.3 and NR 243.19(3)(c) 5:
 - a. The “Acres Applied” appears to include total acres, which includes areas where manure cannot be applied. Application rates are calculated based on the “acres applied” field and therefore may be underreported due to fewer acres being applied to.
 - b. The “Legume Credit”, “Second Year Manure Credit”, Additional Fertilizer Nitrogen”, and “Additional Fertilizer: P205” parameters required by permit are not reported.
 - c. The “Banked” parameter required by the permit is not reported. It is unclear what information is being asked for by this parameter.
 - d. Total number of acres actually used by the permittee for land application of manure and process wastewater in the previous 12 months.
4. The Prior Crop was not accurately reported 4 times on the Annual Spreading Report as a requirement of its permit WI-0059374-03-0 and NR 243.19.
5. A review of the information available showed that the following was not recorded for any manure, process wastewater, or soil sample taken as a requirement of its permit WI-0059374-03-0 in Section 3.1.9:
 - a. exact place, method, and time of sampling
 - b. the individual that performed the sampling
6. For crop years 2010 – 2016, form 3200-123 is requirement to be used by permit WI-0059374-03-0 Section 1.8.4 Section 1.7.3 and NR 6.0 6.243.19(3)(c) 5. Some, but not

- all, of the information that is required to be recorded on form 3200-123 is submitted by [FOIA Ex. 6 (Personal)] on a document generated by SnapPlus entitled “CAFO Annual Spreading Report”. It is unclear if WDNR has granted approval for the use of this report.
8. The Annual NMP Update did not contain maps for the following fields that were land applied on in 2013 -2016. The maps are a requirement of its permit WI-0059374-03-0 in Sections 1.6.1 and 1.6.3 and in accordance with s. NR 243.14:
 - a. 2013 11 Hazard Maps missing
 - b. 2014 4 Hazard Maps missing
 - c. 2015 4 Hazard Maps missing
 - d. 2016 3 Hazard Maps missing
 9. [FOIA Ex. 6 (Personal)] permit WI-0059374-03-0 in Section 1.3.1 contains requirements for chemical management yet the Chemical Storage room has a drain that discharges to the Manure Storage Structure.
 10. [FOIA Ex. 6 (Personal)] permit WI-0059374-03-0 in Section 1.8.4 contains requirements for the information below to be included in the Annual Report. EPA, during the review, found that the information below was not always submitted with the Annual Report:
 - a. Soil Test P Ave.
 - b. Field Restrictions
 - c. Lab analyses of the manure
 - d. The “T” compliance worksheet for all fields
 - e. The soil test frequency in the past four years
 11. Additional information which is found in the Annual NMP Update, but not in the Annual Report includes the following requirements from N243.19(3)(c):
 - a. Whether animals (at the operation) are in open confinement or housed under roof
 - b. The most recent soil test analyses completed for fields receiving manure or process wastewater in the previous 12 months
 - c. The number of years of crop phosphorus need applied based on crop rotation
 12. [FOIA Ex. 6 (Personal)] did not meet the requirements for calculating application rates. NR. 243.14(3), contains requirements that state adjustments shall be made to assumed credit based on actual crop yields. [FOIA Ex. 6 (Personal)] documentation only reports the planned yields for crops.
 13. [FOIA Ex. 6 (Personal)] permit WI-0059374-03-0 in Section 3.2.8 contains requirements for the permittee to document weather 24 hours prior before or 24 hours after.
 - [FOIA Ex. 6 (Personal)] checks the weather immediately prior to application, but does not document this information.
 14. For crop years 2010-2016, form 3200-123A contains requirements by its permits WI-0059374-03-0 Section 1.8.4 and Section 1.7.3 and NR 243.19(3)(c) 5 that was not reported.
 - Temperature During Application – Units -Fahrenheit
 15. [FOIA Ex. 6 (Personal)] permit WI-0059374-03-0 in Section 1.7.1 contains requirements to conduct inspections of land application equipment and for this information to be recorded.
 - For years 2010-2016, no documentation of the inspections or the calibration for specific machinery used for land application.

5.0 Records Reviewed

Notes on Sources

- EPA Inspection Report dated 2015
- (NMP), NMP Updates, Annual Reports, and other documents such emergency action plans (EAP).
- In general, FOIA Ex. 6
(Personal
Records) submitted the following NMP documents:
 - 2010 NMP (NMP information for crop year 2011 was taken from the 2010 NMP)
 - 2012 NMP Update
 - 2013 NMP Update
 - 2014 NMP Update
 - 2015 NMP Update
 - 2016 NMP Update
- WDNR and/or FOIA Ex. 6
(Personal
Records) submitted an Annual Report for each crop year from 2010 through 2016.
- The following are a few examples of the referenced sections, with a brief explanation of what the sections contain:
 - NMP Narrative
 - SnapPlus Field Data and 590 Assessment Plan: *inventory of fields and field data*
 - SnapPlus Manure Production Estimator Report: *estimated manure production volumes*
 - SnapPlus Soil Test Report: *summary of soil test results*
 - NMP SnapPlus Spreading Plan Report/Spreading and Nutrient Management Plan: *data on planned applications; SnapPlus Spreading and Nutrient Management by Crop Report – provide planned yields.*
 - Annual Report Spreading Plan Report: *data actual applications*
 - Annual Report Monitoring and Inspection Program Checklist: *record of self-inspections and monitoring*
 - Annual Report – *Annual Report Checklist, Narrative, spill incidents, CAFO Calendar, Quarterly Monitoring Reports, Manure Production Estimator Report, Animal Units Report, Manure transfer, Containment Structure Inspections.*
- SnapPlus: According to its website (<http://snapplus.wisc.edu/about-snap-plus>):
 - “SnapPlus is a Nutrient Management Planning software program designed for the preparation of nutrient management plans in accordance with Wisconsin’s Nutrient Management Standard Code 590. SnapPlus will calculate:
 - “Crop nutrient (N, P₂O₅, K₂O) recommendations for all fields on a farm taking into account legume N and manure nutrient credits consistent with University of Wisconsin recommendations
 - “A RUSLE2-based soil loss assessment that will allow producers to determine whether fields that receive fertilizer or manure applications meet tolerable soil loss (T) requirements.
 - “A rotational Phosphorus Index value for all fields as required for using the P Index for phosphorus management.
 - “A rotational P balance for using soil test P as the criteria for phosphorus management.”